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Mortality of Calves and Cattle on U.S. Beef Cow-calf Operations

In 2007–08, the U.S. Department of Agriculture's National Animal Health Monitoring System (NAHMS) studied beef cow-calf health and management practices. The Beef 2007–08 study was conducted in 24 States,¹ representing 79.6 percent of U.S. operations with beef cows and 87.8 percent of U.S. beef cows. Herds were grouped into 4 size categories based on the number of beef cows present as of October 1, 2007: 1 to 49, 50 to 99, 100 to 199, or 200 or more cows.

One goal of the Beef 2007–08 study was to examine calf and cattle mortality levels and causes of mortality as reported by the producers. Understanding average levels and causes of mortality for cattle might help producers identify problems on their own operations and make changes in management practices that improve profitability.

Calf mortality, 2007

Producing and raising healthy calves is integral to the profitability and success of a cow-calf operation. Providing proper nutrition and health care to heifers and cows, as well as providing timely intervention during calving, if needed, can help increase the percentage of calves that are born alive and survive to weaning.

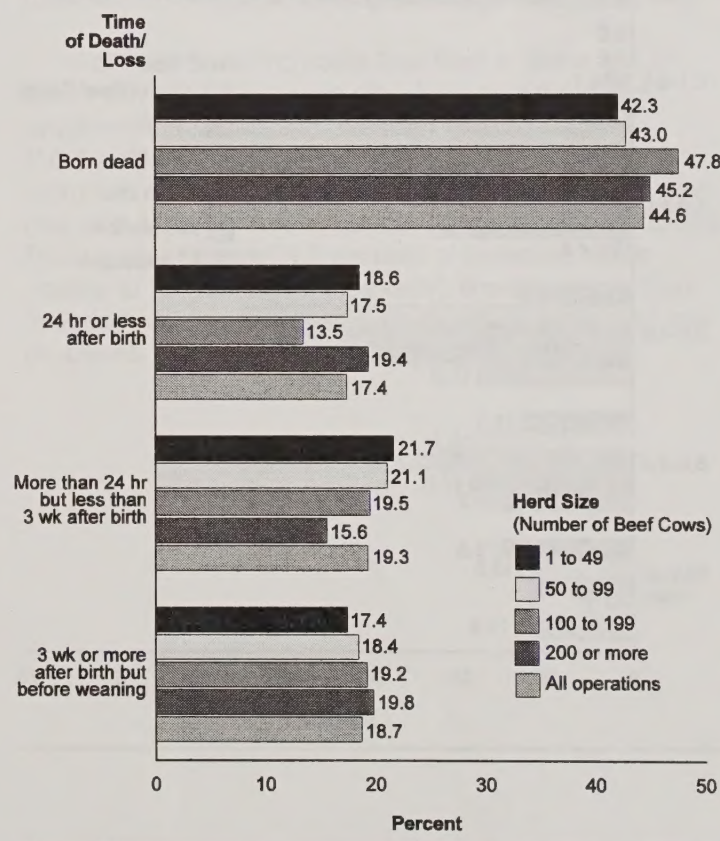
Of all beef calves born during 2007, 93.6 percent were born alive² and survived to weaning; 3.5 percent were born alive but died or were lost to other causes, such as theft, before weaning; and 2.9 percent were born dead (table 1). Overall, 97.1 percent of calves were born alive. Percentages of calves that were born alive and survived to weaning, born alive but died or were lost before weaning, and born dead were similar across herd sizes.

Of all calves born during 2007, 6.4 percent either were born dead or died before weaning. Of these calves, 44.6 percent were born dead (figure 1). Of the remaining 55.4 percent of these calves, about one-third died or were lost during each of three time periods: 24 hours or less after birth, more than 24 hours but less than

Table 1. Percentage of *All Beef Calves Born* in 2007, by Outcome and by Herd Size

Outcome	Percent Beef Calves				
	Herd Size (Number of Beef Cows)				
	1-49	50-99	100-199	200 or More	All Ops.
Born alive and survived to weaning	93.1	93.0	93.3	94.5	93.6
Born alive but died/ were lost before weaning	4.0	4.0	3.5	3.0	3.5
Born dead	2.9	3.0	3.2	2.5	2.9
Total	100.0	100.0	100.0	100.0	100.0

Figure 1. For Calves Born During 2007 that did not Survive to Weaning, Percentage that were Born Dead, Died, or were Lost, by Time of Death or Loss and by Herd Size



¹ States:

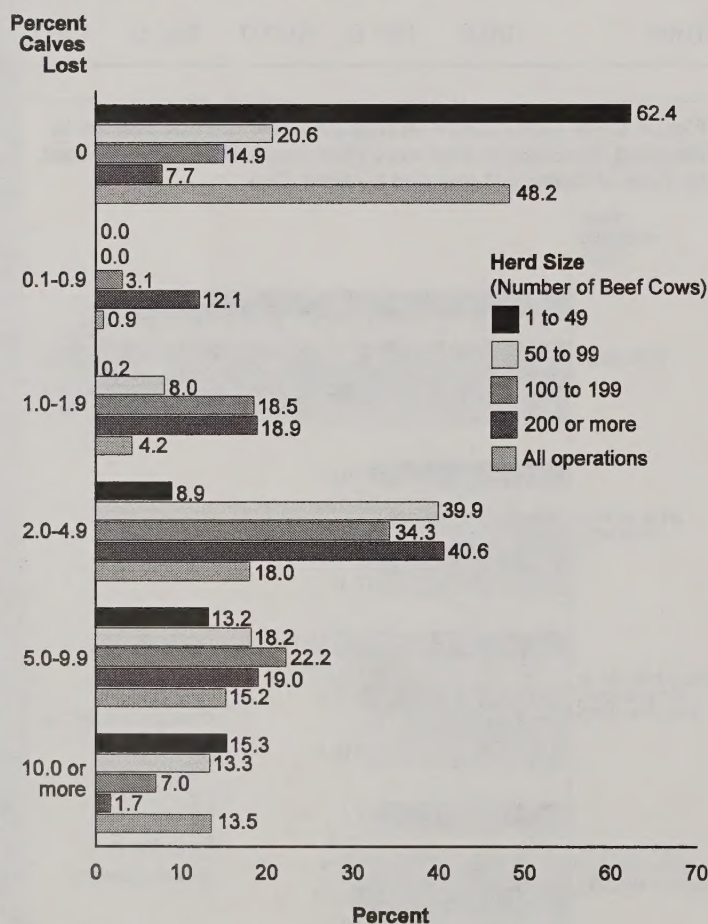
Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Virginia, and Wyoming.

² A calf was considered to be born alive if it survived at least 2 hours after birth.

3 weeks after birth, and 3 weeks or more after birth but before weaning. For calves that were born alive but did not survive to weaning, losses were also similar across the three time periods by herd size.

Overall, almost one-half of operations (48.2 percent) did not lose any of their calves that were born alive during 2007. A higher percentage of operations with 1 to 49 beef cows (62.4 percent) lost no calves than operations with 50 to 99, 100 to 199, or 200 or more cows (20.6, 14.9, and 7.7 percent, respectively) [figure 2]. A higher percentage of operations with 1 to 49 cows lost 10 percent or more of calves (15.3 percent) compared with operations with 200 or more beef cows (1.7 percent). This difference might reflect the fact that, for the smallest herds, each calf represents a higher percentage of the herd; for example, loss of a single calf in a herd with 10 calves born alive results in a 10-percent loss. On more than one-third of operations with 50 to 99 beef cows, 100 to 199 beef cows, and 200 or more beef cows, between 2.0 and 4.9 percent of calves born alive died or were lost to all causes (39.9, 34.3, and 40.6 percent, respectively).

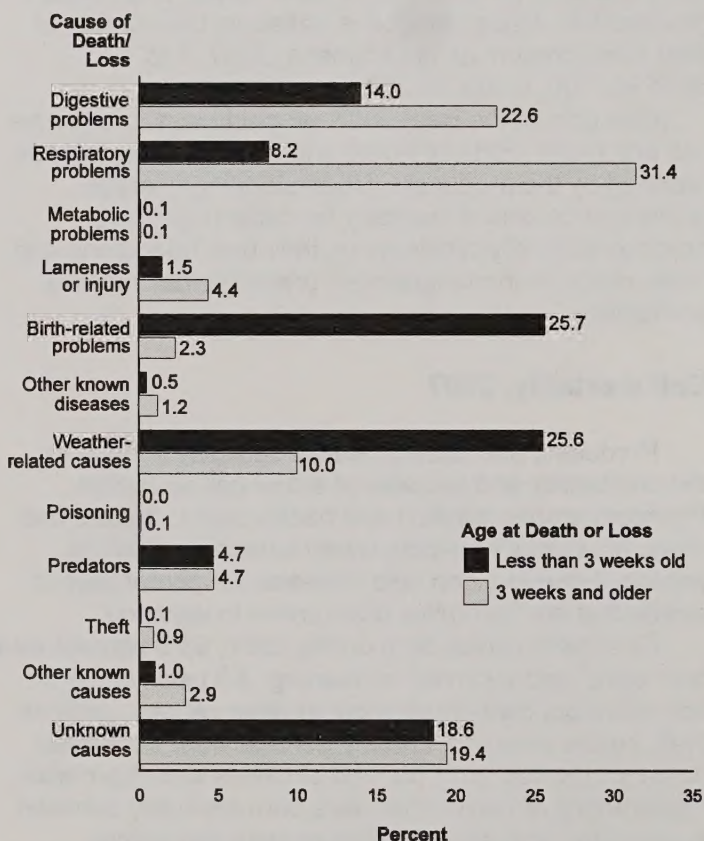
Figure 2. Percentage of Operations by Percentage of Calves Born Alive that Died or were Lost to All Causes Before Weaning During 2007, and by Herd Size



Causes of calf mortality, 2007

For operations that lost unweaned calves during 2007, more than one-half of calves less than 3 weeks old died from birth-related problems or weather-related causes³ combined (figure 3). Unknown causes accounted for an additional 18.6 percent of losses in calves less than 3 weeks old. Digestive problems, which were defined to include bloat, scours, parasites, enterotoxemia, acidosis, etc., were another important factor, causing 14.0 percent of losses in calves less than 3 weeks old.

Figure 3. For Calves that Died or were Lost to all Causes Before Weaning in 2007, Percentage of Calves by Cause of and Age at Death or Loss



Of calves 3 weeks of age and older that died or were lost in 2007, more than one-half died from digestive or respiratory⁴ problems combined. Unknown causes accounted for an additional 19.4 percent of losses in calves 3 weeks of age and older. Weather-related problems also caused 10.0 percent of losses among calves 3 weeks and older.

³ Weather-related causes were defined to include lightning, drowning, chilling, etc.

⁴ Respiratory problems were defined to include pneumonia, shipping fever, etc.

By properly managing heifers and cows and the risks associated with birth and the first few weeks of life, producers can increase the percentage of calves that survive to weaning. Factors that producers should consider in calving management because they can affect calf survival include dystocia management (especially for heifers); the calving environment, including weather; and passive transfer. For more information on calving management from the NAHMS Beef 2007–08 study, see “Calving Management Practices on U.S. Beef Cow-calf Operations” (#542.0209, February 2009).

Beef breeding cattle mortality, 2007

Overall, 1.5 percent of beef breeding cattle, weaned or older, died or were lost to other causes (such as theft) in 2007. The percentage of beef breeding cattle that died or were lost in 2007 was similar across herd sizes (table 2).

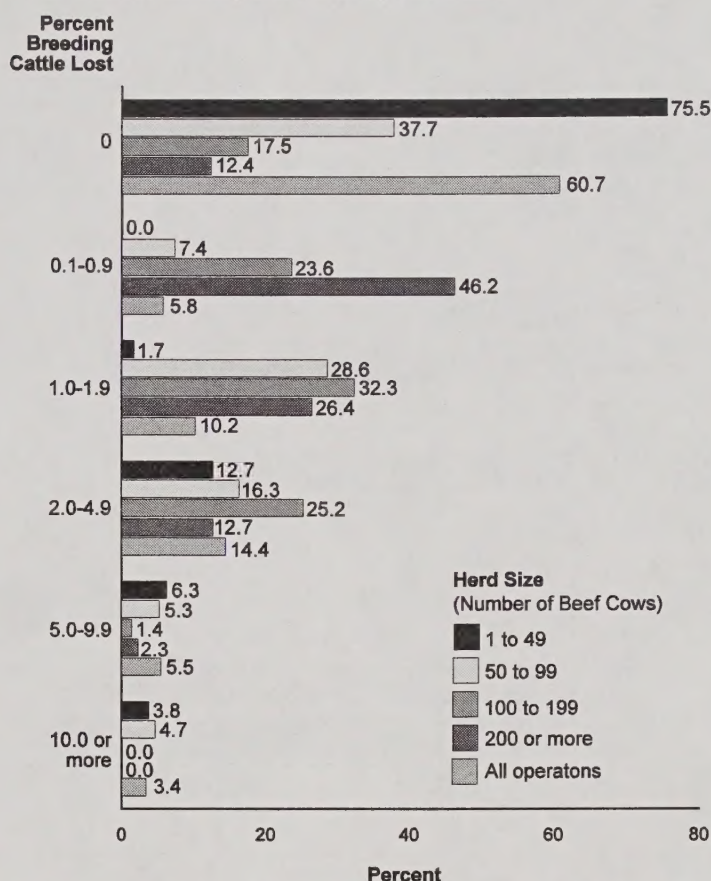
Table 2. Percentage of Beef Breeding Cattle, Weaned or Older, that Died or were Lost* to all Causes during 2007, and by Herd Size

Percent Cattle				
Herd Size (Number of Beef Cows)				
1-49	50-99	100-199	200 or More	All Operations
1.7	2.0	1.5	1.1	1.5

*Number of beef breeding cattle that died or were lost as a percentage of the October 1, 2007, inventory of cows, replacement heifers, and bulls.

As expected, larger operations were more likely to report at least one death or other loss of beef breeding cattle, weaned or older. Overall, 60.7 percent of operations had no deaths or other losses of breeding cattle during 2007; however, only 12.4 percent of operations with 200 or more beef cows and only 17.5 percent of operations with 100 to 199 beef cows had no breeding cattle that died or were lost to other causes (figure 4). Almost one-half of operations with 200 or more beef cows (46.2 percent) lost between 0.1 to 0.9 percent of breeding cattle during 2007.

Figure 4. Percentage of Operations by Percentage of Beef Breeding Cattle, Weaned or Older, that Died or Were Lost to all Causes during 2007, and by Herd Size



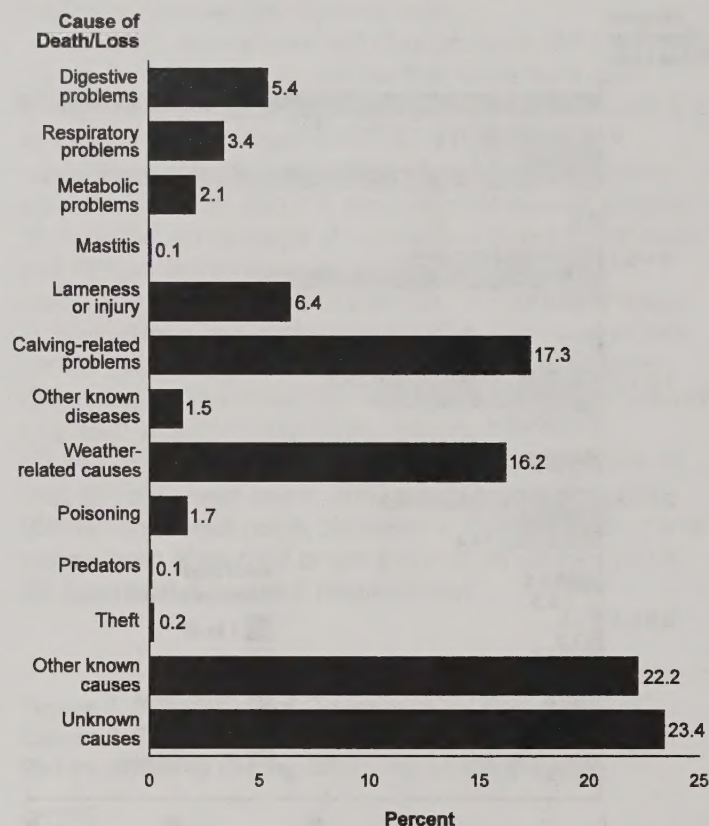
Causes of beef breeding cattle mortality, 2007

For beef breeding cattle that died or were lost in 2007, similar percentages died from calving-related problems (17.3 percent), weather-related causes (16.2 percent), other known causes (22.2 percent), or unknown causes (23.4 percent) [figure 5]. Old age was one of the “Other known causes” specified by producers. Producers attributed 1.5 percent of breeding cattle deaths to “Other known diseases”; diseases specified included cancer, anaplasmosis, heart disease, and eye problems.



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Figure 5. For Beef Breeding Cattle that Died or were Lost to all Causes During 2007, Percentage of Cattle Lost by Cause of Death



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Summary

Knowing the risks and understanding common causes of mortality in beef calves and cattle can help producers implement management practices to reduce these losses. An effective herd-health and production-management program would typically include biosecurity practices to prevent the introduction and/or spread of disease agents, nutrition and preventive health programs to improve disease resistance of cattle and optimize reproductive success, and reproductive management practices to enable timely assistance for dams and calves during calving season. For NAHMS Beef 2007–08 information on current vaccination practices on cow-calf operations, please see "Vaccination of Cattle and Calves on U.S. Beef Cow-calf Operations" (#564.1209, December 2009).